

PATENT SPECIFICATION

(11) 1 253 959

DRAWINGS ATTACHED

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- (21) Application No. 34529/70 (22) Filed 16 July 1970
- (31) Convention Application No. P 19 47 230.1
- (32) Filed 18 Sept. 1969 in
- (33) Germany (DT)
- (45) Complete Specification published 17 Nov. 1971
- (51) International Classification F 16 L 39/02 33/22 33/24
- (52) Index at acceptance

F2G 10B 24B6 24E1 25A 2B 2F 35



(54) DOUBLE HOSE COUPLING

(71) We, OLGA MOTSCH and IRMGARD OTT, both of 66 and 68 Zeppelinstrasse, Friedrichshafen, Germany, respectively both German Nationals, and ELEKTRON-
5 Co.M.B.H., a German Body Corporate, of 56 Pragstrasse, Stuttgart, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be per-
10 formed, to be particularly described in and by the following statement:—

This invention relates to a detachable double hose coupling for connecting a double flexible hose to a component containing two through bores, particularly with the connecting part of a movable apparatus containing two through bores and intended for manual operation.

If in such cases use is made of the known 20 double hoses which are fitted with two adjacent through bores and which are to be mounted on two adjacent hose nipples, the mobility of the system suffers from the fact that double hoses of this kind are practically 25 inflexible in the plane in which the axes of the conduits are situated adjacent to each other and that it is only in the plane perpendicular thereto that they can be bent. In addition, a system of this kind necessi-
30 tates supplementary securing devices situated at certain distances apart, to enable the two individual hoses to be held together to form a double hose. A further drawback resides in the fact that this construction occupies a comparatively large amount of space. Finally, a system of this kind is 35 expensive.

It is an object of the invention to provide 40 a double hose coupling which will ensure even flexibility in all planes, enable use to be made of the usual individual hoses and prove space-saving, simple, inexpensive and easy to handle.

According to the present invention there 45 is provided a detachable double hose coupling for connecting a double flexible hose to

[Price 25p]

a component having two through bores, the coupling comprising two hose nipples arranged coaxially to form two coaxial hose bores, the inner of which hose nipples is provided with a flange by which it is located coaxially within the outer hose nipple, the bore of the inner hose nipple extending axially therethrough and the bore of the outer hose nipple being in communication with that part of the coupling which receives the component through further bores in the flange, so that upon engagement with the component the coupling is sealed therewith and the bore of the inner hose nipple communicates directly with a first bore of the component while the bore of the outer hose nipple communicates with a second bore of the component via the further bores in the flange of the inner hose nipple and a space defined between the component and coupling.

Constructional forms of the invention will now be described by way of example with reference to the accompanying drawings, in which:

Figure 1 is a longitudinal sectional view of one embodiment constructed according to the invention;

Figure 2 is a longitudinal sectional view of another embodiment constructed according to the invention; and

Figure 3 is a cross-sectional view along the line III—III of Figure 2.

Referring now to Figures 1 and 2 a double hose coupling as a whole is marked 10 and a component to which the hose is to be coupled as a whole being marked 20.

The coupling 10 is provided with an outer hose nipple 11 of which the side to be connected with the component 20 widens out to form a cap screw 12. A flange-like part 13 of a detachable inner hose nipple 14 rests against the inner end surfaces of the cap screw 12. Individual hoses 31 and 32 are mounted on the two hose nipples 11, 14 and together perform the function of a

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double hose, arranged coaxially, with two bores 33 and 34 separated from each other by the wall of the inner hose 32.

The component 20, which contains two bores 21 and 22, is provided with a threaded pin which is concentric with the bore 21 and which engages with the cap screw 12. The surfaces of threaded pin and the coupling 10 which face towards each other rest tightly against each other in the zone of the bore 21 or a bore 15 of the inner hose nipple 14 which is aligned with the bore 21. The surfaces by which the threaded pin and coupling 10 thus rest against each other being conical in the example shown in Figure 1, one of the surfaces being formed on a part 16 belonging to the inner hose nipple 14 and extending beyond the flange 13, while the other is formed on a sealing device 23 of elastic material. Between these parts, moreover, a space 24 is left free, into which the bore 22 leads and which is also connected via bores 17 in the flange 13 with the bore 33.

In the example shown in Figures 2 and 3 the sealing device 23 is of a flat construction, and two bores 22 are provided which are connected with the space 24. This example also includes bars or shoulders 18 which are provided on the internal surface of the outer hose nipple 11 and which extend radially inwardly to define therebetween passages 19. The bars are so dimensioned that they come to rest against the hose 32 mounted on the inner nipple 14. This construction proves advantageous when a medium subjected to a high pressure is to be conveyed through the hose 32, because in this case the bars 18 prevent the hose 32 from being moved off the nipple 14. It is advantageous for the bars 18 to be of helical construction, to facilitate assembly of the coupling 10 and hoses.

In an alternative construction (not shown) the sealing device 23 is omitted and the coupling 10 and component 20 are sealed hermetically.

As can be immediately seen, the coupling described is extremely easy to produce and detach. It is also possible, without any particular difficulty, for any desired volumetric ratio to be selected between the bores 21 and 22, simply by removing the hose nipple 14 and/or the component 20 and replacing them with others of the particular cross section selected.

WHAT WE CLAIM IS:

1. A detachable double hose coupling

for connecting a double flexible hose to a component having two through bores, the coupling comprising two hose nipples arranged coaxially to form two coaxial hose bores, the inner of which hose nipples is provided with a flange by which it is located co-axially within the outer hose nipple, the bore of the inner hose nipple extending axially therethrough and the bore of the outer hose nipple being in communication with that part of the coupling which receives the component through further bores in the flange, so that upon engagement with the component the coupling is sealed therewith and the bore of the inner hose nipple communicates directly with a first bore of the component while the bore of the outer hose nipple communicates with a second bore of the component via the further bores in the flange of the inner hose nipple and a space defined between the component and coupling.

2. A coupling as claimed in claim 1, wherein the inner hose nipple engages a sealing member forming part of the component.

3. A coupling as claimed in claim 2, wherein those surfaces of the sealing member and of the coupling which are sealed against one another in the zone of the bore of the inner hose nipple are of conical construction.

4. A coupling as claimed in claim 1, 2 or 3, wherein the inner hose nipple 14 is detachably connected with the coupling.

5. A coupling as claimed in any of the preceding claims, wherein the internal surface of the outer hose nipple is fitted with bars which extend radially inwards to define passages therebetween and which bars are so dimensioned that they engage a hose mounted in use on the inner nipple.

6. A coupling as claimed in claim 5, wherein the bars are of helical construction.

7. A coupling as claimed in claim 1, wherein the component and coupling are sealed hermetically.

8. A coupling substantially as hereinbefore described with reference to, and as illustrated in, Figure 1 or Figures 2 and 3 of the accompanying drawings.

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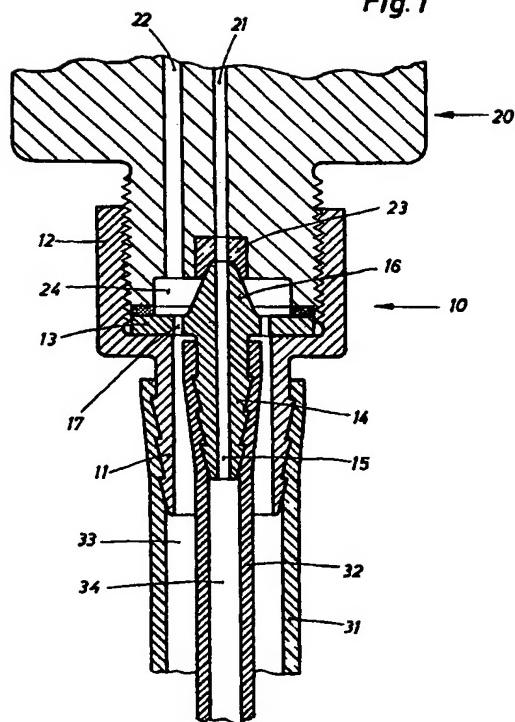
Printed for Her Majesty's Stationery Office by Burgess & Son (Abingdon), Ltd.—1971.
Published at The Patent Office, 25 Southampton Buildings, London, WC2A 1AY,
from which copies may be obtained.

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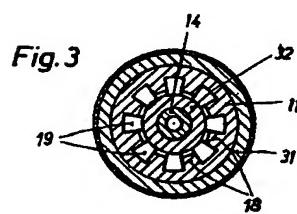
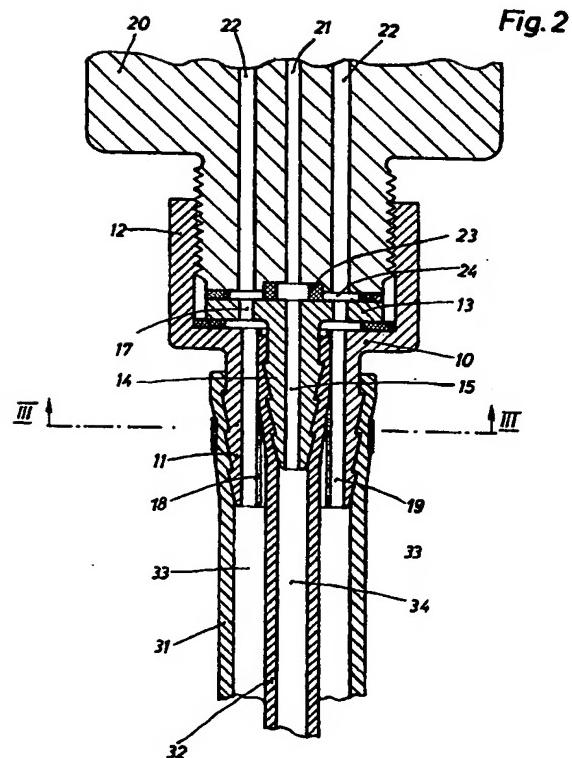
Sheet 1

Fig. 1



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 Sheet 2



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